In the Claims:

Claims 1-27 (Cancelled).

28. (New) A tether system for anchoring a tension leg platform to the sea bed, comprising:

a plurality of hollow and watertight tethers operable to withstand a tension force to be generated between the tension leg platform and the sea bed, each of said tethers including an upper section having a positive buoyancy and including a lower section having a greater pressure resistance than said upper section, said upper section of each of said tethers having a larger diameter than said lower section of each of said tethers such that each of said tethers has a stepped reduction in diameter from the tension leg platform toward the sea bed.

29. (New) The tether system of claim 28, wherein said upper section of each of said tethers is shaped and arranged so as to compensate for the water weight of said lower section of each of said tethers.

30. (New) The tether system of claim 28, wherein said lower section of each of said tethers has less buoyancy than said upper section of each of said tethers.

31. (New) The tether system of claim 28, wherein each of said tethers further includes an intermediate section between said upper section and said lower section, said intermediate section having a diameter smaller than a diameter of said upper section and larger than a diameter of said lower section such that each of said tethers has at least two stepped reductions in diameter from the tension leg platform toward the sea bed.

32. (New) The tether system of claim 28, wherein each of said tethers further includes an intermediate section between said upper section and said lower section, said intermediate section having a wall thickness larger than a wall thickness of said upper section and smaller than a wall

thickness of said lower section such that each of said tethers has at least two stepped increases in wall thickness from the tension leg platform toward the sea bed.

33. (New) The tether system of claim 28, wherein said upper section of each of said tethers has a smaller wall thickness than said lower section of each of said tethers, said upper section of each of said tethers having a uniform cross sectional area along the height of said upper section.

34. (New) The tether system of claim 28, wherein said upper section and said lower section of each of said tethers are made of steel.

35. (New) The tether system of claim 28, wherein said upper section and said lower section of each of said tethers are made of composite materials.

36. (New) The tether system of claim 28, wherein each of said tethers has a substantially neutral buoyancy.

37. (New) The tether system of claim 36, wherein said lower section of each of said tethers has less buoyancy than said upper section of each of said tethers.

38. (New) The tether system of claim 36, wherein said upper section of each of said tethers has a smaller wall thickness than said lower section of each of said tethers, said upper section of each of said tethers having a uniform cross sectional area along the length of said upper section.

39. (New) The tether system of claim 36, wherein said upper section and said lower section of each of said tethers are made of steel.

40. (New) The tether system of claim 36, wherein said upper section and said lower section of each of said tethers are made of composite materials.

41. (New) A tension leg platform system, comprising:

a tension leg platform operable to float in the sea; and

a plurality of hollow and watertight tethers for anchoring said floating tension leg platform to the sea bed, said tethers being operable to withstand a tension force to be generated between said tension leg platform and the sea bed, each of said tethers including an upper section having a positive buoyancy and including a lower section having a greater pressure resistance than said upper section, said upper section of each of said tethers having a larger diameter than said lower section of each of said tethers such that each of said tethers has a stepped reduction in diameter from said tension leg platform toward the sea bed.

42. (New) The tether system of claim 41, wherein each of said tethers further includes an intermediate section between said upper section and said lower section, said intermediate section having a diameter smaller than a diameter of said upper section and larger than a diameter of said lower section such that each of said tethers has at least two stepped reductions in diameter from said tension leg platform toward the sea bed.

43. (New) The tether system of claim 41, wherein each of said tethers further includes an intermediate section between said upper section and said lower section, said intermediate section having a wall thickness larger than a wall thickness of said upper section and smaller than a wall thickness of said lower section such that each of said tethers has at least two stepped increases in wall thickness from said tension leg platform toward the sea bed.

44. (New) The tether system of claim 41, wherein said upper section of each of said tethers has a smaller wall thickness than said lower section of each of said tethers, said upper

section of each of said tethers having a uniform cross sectional area along the height of said upper section.

45. (New) The tether system of claim 41, wherein said upper section and said lower section of each of said tethers are made of steel.

46. (New) The tether system of claim 41, wherein said upper section and said lower section of each of said tethers are made of composite materials.

47. (New) A tether system for anchoring a tension leg platform to the sea bed, comprising:

a plurality of hollow and watertight tethers operable to withstand a tension force to be generated between the tension leg platform and the sea bed, each of said tethers including pipe sections having different diameters such that each of said tethers has a continuous reduction in diameter from the tension leg platform to the sea bed, each of said tethers having an increased pressure resistance from the tension leg platform to the sea bed.